

Unit 6 Plan

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Grade: 9
Subject: Algebra 1

Designed in School Year: 2010-2011
Unit: Radicals, Exponential Functions, & Rational Expressions
Estimated Timeframe: 6 weeks

Unit topic and subtopics	Essential Learning	Standards	Assessments	Strategies
Radicals, Exponential Functions, & Rational Expressions	<p>Understandings (Students will understand that):</p> <ul style="list-style-type: none"> Real numbers, including those expressed using powers and roots, are used in everyday computations. Exponential functions represent quantities that increase or decrease by a constant multiple. Rational expressions can be combined and simplified, just like fractions. 	<p>Illinois State Standards:</p> <p>7.A.4b 8.B.3 8.B.4b 8.C.3 8.D.3b 8.D.3c 8.D.4</p>	<p>Anchor Performance Assessment:</p> <p>Task Overview: Exhibit mastery of skills presented in this unit by providing written solutions to a variety of algebraic problems.</p>	<p>Homework assignments, class discussion, small group activities</p>
Radicals	<p>Skills (Students will be able to):</p> <ul style="list-style-type: none"> use properties to simplify radical expressions, including rationalizing the denominator add, subtract, and multiply radicals solve a radical equation, including those with extraneous solutions apply the Pythagorean Theorem and its converses to find missing coordinates 	<p>College Readiness Standards: Expressions, Equations, & Inequalities (20-36)</p>	<p>Products: Comprehensive written exam assessing the skills practiced in this unit.</p>	<p>Tests and quizzes</p>
Exponential Functions	<ul style="list-style-type: none"> write and graph inverse functions solve a percentage problem graph exponential functions and compare them to parent functions determine whether a linear, exponential, or quadratic function best models a set of data 	<p>Basic Operations & Applications (20-32)</p> <p>Numbers: Concepts & Properties (13-32)</p> <p>Graphical Representations (33-36)</p>	<p>Criteria: An exam score below 69.5% is failing. An exam score of 69.6%–76.4% is below average, 76.5%–84.4% is average, 84.5%–92.4% is above average, and 92.5% or above is excellent.</p>	<p>Oral participation: Students both ask and answer questions posed by the teacher and other students</p>
Rational Expressions	<ul style="list-style-type: none"> simplify rational expressions by multiplying, dividing, addition, and subtraction 	<p>Functions (24-27)</p> <p>Common Core Standards: A-REI.2 A-APR.7 F-LE.3</p>	<p>Other Key Assessments/Evidence: Frequent quizzes assessing the skills practiced in this unit.</p>	<p>Notebook entries which include the results of:</p> <ul style="list-style-type: none"> demonstrations: students working individually, in pairs, or in groups demonstrate ideas using manipulatives, graph paper, calculators, or whiteboard non-routine problems: the student restates the problem in his own words, explores the problem by drawing a picture or a chart, chooses a strategy such as guess and test, looks for a pattern, logical deduction, working backward, or exhaustive listing, and carries out the chosen strategy to solve the problem error analysis and commentary, in which students keep a list of specific homework, tests, and quiz problems that resulted in errors; the format includes a statement of the problem as posed, a statement of the exact error made, and a correction and comment